

## Evaluating Cultural Synthesis as a Catalyst for Pure and Sustainable Architecture: A case Study of the Dominican Chapel, Ibadan

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### **Abstract**

*Pure architecture echoes traditional and cultural practices with features reflecting functional and aesthetical sustainability, framed by context-sensitivity and environmentally responsible designs. Studies have shown that sustainable architecture embodies indigenous cultural identity of a people, valued by their cultural capital and hinged on their traditional heritage. Therefore, the effects of cultural neglect in place-making cannot be overemphasized. Indeed, the current concern on the erosion of cultural principles in contemporary works of architecture appears to account for nonorganic growth in African place-making with attributable consequences. This paper, therefore, examined the impact of cultural heritage on sustainable architectural development using the purity of architecture from the exploration of cultural synthesis. A case study of the Dominican Chapel at Ibadan, Nigeria was adopted with a qualitative approach to evaluate the impact of cultural forms and layouts on the functional aesthetics and sustainability of the Chapel. Field observations, interviews with the project architect, and other requisite observers in conjunction with content analysis provided relevant data which pointed attention to the value of cultural integration in the production of pure and sustainable architecture. The study revealed that cultural identity plays a pivotal role in shaping both the aesthetic and functional aspects of architecture, contributing significantly to sustainable postcolonial place-making. It advocates for the integration of indigenous architectural forms with practical, hands-on design approaches to foster originality and reduce reliance on Western paradigms. However, it encourages a shift to cultural synthesis in architectural expression and presents a clarification for both students and practicing architects towards adopting cultural forms in place-making for originality and sustainability choices.*

**Keywords:** *Culture, Cultural Capital, Cultural Synthesis, Forms, Pure Architecture.*

### **1.0 Introduction**

Over the years, issues of sustainability discourse on spatial developments have been dominated by measurable indices of environmental performance, technological innovation, energy efficiency, and economic resilience. While these concerns remain critical, the prevailing techno-scientific dimensions often marginalize culture as a key element in architectural contribution to sustainable development. This omission is significant because architecture is not merely a technical response to environmental challenges or physical functional needs but also a cultural element symbolically positioned with social structures, ecological intelligence, and lived practices of a people. (Ayoobi, et al, 2024)

Scholars have frequently questioned the idea that technology alone should determine works of architecture. Rapoport (1969) demonstrated that socio-cultural values often exert stronger impact on architectural forms than other variables such as climatic or material constraints. Also, Tosi (2023) argued through his theory of critical regionalism that architecture should be rooted in local topography, climate, and cultural memory to resist placelessness in contemporary spatial developments. Pallasmaa (2005) expanded this perspective by focusing on architecture as a sensory and lived experience opposed to being just a technical or visual product without feelings. However, Mba, et al (2025) demonstrated how culturally responsive modernism can bridge tradition and contemporary sustainable development.

While these contributions are notable, current literature predominantly addresses contextual adaptation, regional identity, and environmental responsiveness without a thorough examination of **architectural purity** as a methodological basis for sustainable development. Some scholars, however, consider culture as supplementary to sustainability, rather than as a foundational resource that informs sustainable architectural principles (Throsby, 2024; El Faouri & Sibley, 2024).

This study approaches **pure architecture** from the standpoint of indigenous African spatial traditions, characterizing it as an architectural output that originates authentically from the environmental knowledge systems, cosmological orders, communal values, material expertise, and symbolic practices inherent to a community which is free from significant alteration by externally imposed formal patterns. This concept aligns with Rapoport's (1969) view about spatial purity when he affirms that spatial authenticity occurs when

the mental models of the inhabitants of a place align with their physical cues and the organization of the physical space. In this context, purity signifies adherence to culturally ingrained principles of spatial organization and environmental adaptation, rather than connoting historical inflexibility or opposition to innovation.

Many African architectural traditions developed in response to climate, ritual, resources, and social cohesion. These practices show that sustainability is a natural cultural feature embedded in spatial design, rather than an external technological concept. The article suggests that sustainable architecture should not focus only on technology and environmental concerns. Instead, it needs to incorporate cultural integration as a key approach. It also argues that architectural purity provides an important perspective for redefining sustainability, by blending traditional cultural values with modern architectural practices (Arigbabu, 2025; Adetoro & Gambo, 2025).

Specifically, the study explores how cultural synthesis in the Dominican Chapel enhances architectural efficiency while preserving identity. It revealed that sustainability in spatial design goes beyond environmental science and does embody culture as a foundational requirement and further involves designing spaces that reflect cultural values and community histories. The research proposes a conceptual direction which demonstrates the dual capacity of architecture to function simultaneously as an instrument of sustainable development and a repository of cultural continuity.

## 1.2 Aims and Objectives

The study purposes to examine how culturally grounded architectural purity impacts sustainable spatial development. The specific objectives are to:

- a) Conceptualize architectural purity from indigenous spatial interpretations as demonstrated in the Dominican Chapel.
- b) Evaluate the role of cultural synthesis in architectural sustainability of the Dominican Chapel.

## 1.3 Study Scope

The paper is scoped primarily on the analysis of the ecclesiastical architecture of the Catholic Dominican Chapel, Ibadan as a single case study. It focuses on the integrated indigenous cultural principles with the modern sustainable concepts to explore how cultural forms account for the purity of the Chapel architecture to inform functional and aesthetics sustainability. The study did not extend to the structural or liturgical aspects of the Chapel but confined to the phenomenological experiences of the users and the observed sustainability indices of the Chapel as perceived by the observers.

The choice of this case study, the Dominican Chapel, is rationalized by its intense cultural features and innovative synthesis of cultural elements with sustainable modernist design imperatives for which it earned the architect a global recognition (Hill, 2023). The Chapel blends traditional values with modern principles to enhance significant impact of emotional and spiritual experiences (Godwin & Hopwood, 2007; Abba, et al., 2023; Ajadi, 2023; Nnamdi, 2023).

## 2.0 Overview of Sustainability in Architecture

The term sustainability has been ostensibly focused on ecological challenges, resource depletion and environmental imbalance (El Faouri & Sibley, 2024). This tendency has laid credence to the significance of designing buildings that are purposed to reduce environmental impact for the common heritage of the community (Mba, et al, 2025). Much as architecture is confronted with these issues of ecological sustainability it is also pertinent to note that the relevance of culture in shaping architecture presents a major concern in determining its sustainability (Yanjun, et al., 2026). The cultural beliefs and traditions of people play a major role in influencing how the community decides and prioritizes their development. This is often evident in how they are influenced by the views they hold about their religious or spiritual tendencies towards housing, education, healthcare and social services as they connect with their culture.

For an instance, the choice of building materials like timber, stone, mud, thatch, bamboo which are easily available and abundant in the traditional cultural setting can account for resource efficiency and amenable with sustainability goals (Jegade & Enwonwo, 2025). Most times, these choices are guided by customs or cultural inclinations which are frequently shaped by ecological influences (Yanjun, et al., 2026). Often, when the buildings are culturally responsible, they are adept with the local climate conditions and more sustainable in the local environmental situations (Nnamdi, 2023).

Usually, traditional building concepts are articulated to connect local culture and social structures (Nwoko, 2022). They help to build community ties in the alignment of the building designs to support communal living and shared values (Arigbabu, 2025). Therefore, works of architecture do not only provide shelter but constitute cultural artifacts that embody the values, beliefs, and traditions of the societies they create (Nnamdi, 2023). It is pertinent, therefore, to note that architecture should not only respond to

environmental challenges but engage with cultural determinants hinging on its provision for spaces that accommodate and reflect the diverse cultural identities of the local communities.

### 2.1 Pure Architecture and Sustainability

The term pure architecture is drawn from the architectural philosophy which emphasizes the integrity of a work of architecture based on its design, functionality, honesty in the use of materials and aesthetics simplicity as advanced by the likes of Le Corbusier (1986) in the modernist approach. However, the inclination of Pallasmaa (2005) on the proposition that a building should connect to the environment both functionally and emotionally situates more with originality and a better alignment with the concept of pure architecture.

Therefore, from the perspective of indigenous African spatial traditions, pure architecture embodies architectural outputs that originate authentically from the environmental knowledge systems, cosmological orders, communal values, material expertise and symbolic practices inherent to a community which is devoid of externally imposed constraints. This perspective derives support from Rapoport's (1969) principles of spatial authenticity, in which he suggests that authenticity arises when people's mental models match their physical surroundings and an impure acknowledgement of their spatial articulation.

In this context, therefore, purity refers to following culturally established rules for organizing spaces and adapting to surroundings, instead of implying a rigid stance against change or historical resistance to new ideas (Rapoport, 1969). This is achieved by deploying relevant forms, materials and techniques in place-making towards reconciling the principles of sustainability in works of architecture. Resilient architecture appears to be framed from the adoption of the peculiarities of the environment in fusion with the cultural heritage of the people (Mba, et al, 2025).

### 2.2 Importance of Cultural Synthesis in Architecture

Cultural synthesis in architecture presents a conscious integration of indigenous cultural forms, values and practices with modern or contemporary ideas to create works of architecture which are ecologically viable, functionally sustainable and culturally relevant (Al Braifkani, 2025). This has become very necessary as the world graduates into the processes of globalization and globalism with architecture facing the threat of homogenization (Adejumo, 2024). While the global penetration of the contemporary styles of architecture has advanced with complex building technologies and alluring architectural styles, particularly in Africa and other postcolonial contexts, it has resulted in the erosion of indigenous traditions and loss of cultural identity (Nwoko, 2022). Cultural synthesis, therefore, offers a chance to reconcile this anomaly by encouraging architects to create works of architecture from local traditions while integrating modern sustainable concepts with a good sense of originality and relevance.

This article seeks to explore how cultural synthesis does not only reserve the propensity to enrich architectural designs but also encourages goals of sustainable development. The integration of cultural identity into the works of architecture can promote a sense of place, strengthen community ties, and contribute to the conservation of cultural heritage (Al Braifkani, 2025). Besides, it can also serve as a powerful tool for addressing socio-economic dimensions of sustainability, particularly in post-colonial environments where the loss of cultural identity has often been associated with socio-economic marginalization.

### 2.3 Cultural Capital and Architecture

Throsby (2024) advanced the principle of cultural capital, referring to the cumulative valuation of the knowledge, practices, standards and norms that are enshrined in the cultural phenomenon of a people and their expressions from the backdrops of history, traditions and identities of the people. In other words, cultural capital suggests the social assets, that include knowledge, cultural awareness, skills and education that people possess which can impact on their social status, opportunities and access to resources (Kahn, 2003). Therefore, since the works of architecture are reflections of the history, traditions and identities of a people, it implies that cultural foundation must provide a sense of meaning and place in the built environment. It is without controversy that the current character of the built environment in Africa, and Nigeria in particular, which is tailored after Western ideals, is a proof of complete loss of cultural capital. Hence creating a synthesis of cultural principles in the built environment is a potential way of preserving cultural heritage while addressing modern sustainability challenges

### 2.4 Defining Sustainability in Architecture

According to the World Commission on Environment and Development (1987), sustainable development is that development which "meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987). The works of architecture can be aligned after this objective from the perspectives of energy efficiency (e.g., natural ventilation, passive solar design specifications, etc), use of renewable resources, use of locally sourced materials, use of biodiversity concepts through the integration of

green spaces, etc (Al Braifkani, 2025). Understanding that these approaches have been considered critical, scholars have demonstrated that sustainability in the works of architecture must be re-evaluated to integrate cultural and social sustainability (Pallasmaa, 2005; Ayooobi, et al, 2024).

## 2.5 Theoretical Considerations

The theoretical background for this study provides the frame for understanding the nexus between sustainability, cultural identity and contemporary reflections in the works of architecture as they hinge on cultural capital and dialectical principles. The theory explores the resolution of why sustainability emerges from cultural synthesis (Kahn, 2003). Kahn's (2003) thought on the three layers of architectural judgement over '**Silence and Light**', '**Material Honesty**', and '**Immeasurability**' presents the guide for this scale. Also, Dialectic principles availed the study the framework to showcase why sustainability becomes a veritable resource with the deployment of a gainful synthesis of traditional cultural values and modernist principles.

### 2.5.1 Louis Kahn Theoretical Judgement in the Works of Architecture and Arts

Kahn (2003) advanced the notion of architectural sustainability by shifting emphasis from external beauty to the revelation of a building's inherent nature, characterized by its form, materials, light, and spatial attributes. The theory centers on three principal concepts: Silence and Light, Material Honesty, and Immeasurability. It posits that architecture originates in Silence - the fundamental aspiration for existence - and is realized through Light, representing its tangible manifestation. He captured this essence by qualifying the significance of cultural values as reflected through traditional building materials and their articulated layouts.

With the intentional application of **material honesty**, the theory advocates for authentic use of materials and spatial composition to invoke an emotional dimension, extending beyond quantifiable elements such as building components or character. Kahn (2003) distinguishes between **form** as an ideal abstraction and **design** as its measurable execution. In projects such as the Dominican Chapel, this approach interprets cultural forms as expressions of a universal architectural identity anchored in the regional articulated principles. More significant is how discernible these forms articulate meaning in silence which embodies judgement-cues for the appeal of a piece of architecture. It presents a rich cultural memory that familiarizes the comfortable and adaptive use of the work of architecture while satisfying sustainability with the inherent environmental characteristics. The materials are sustainable in their use within the environment with better ecological advantage (Tosi, 2023).

### 2.5.2 Dialectical Theory/ Cultural Synthesis in Architecture

Lefebvre (1991) advanced the principles of dialectic concept, offering a useful way to understand how tradition and modernity interact within architecture. This framework suggests that the differences between traditional and modern ideals can be resolved through synthesis - an innovative and culturally lasting result that improves upon both concepts (Al Braifkani, 2025). Applying dialectical theory, this study examines cultural synthesis as a dynamic process with significant potential for developmental strategies. By blending cultural elements from past traditions and current sustainable practices, hybrid forms are created that support ecological and culturally resilient architecture, making them well-suited to address unique developmental challenges.

Integrating sustainability and culture in contemporary works of architecture entails moving beyond the green technologies into the acknowledgement of the notion that both concepts are not mutually exclusive (Arigbabu, 2025). It is pertinent that as architects reconcile designs with bioclimatic implications, local materials and traditional building techniques it should be necessary to integrate cultural heritage and local knowledge in creating spaces that reflect local traditions while meeting modern sustainable standards (Xie & Fechner, 2026; Zou, et al, 2026). Perceptively, the theoretical framework for this paper is laced from the connection or the link between cultural capital, sustainability, dialectical theory and cultural synthesis. These concepts set the canvas for the evaluation of how cultural synthesis can lay credence to the creation of pure and sustainable architecture that addresses both ecological and meaningful egalitarian consciousness leveraged on cultural heritage.

## 2.6 Conceptual Framework

This study aims to explore how culturally grounded "pure architecture" fosters sustainable development in the Dominican Chapel by focusing on cultural synthesis. The conceptual framework (Figure 1) illustrates a shift from intangible cultural assets to concrete sustainable results (Kahn, 2003). The Cultural Foundation - comprised of Cosmology, Social Values, Material Traditions, and Indigenous Knowledge - acts as the core starting point. This base is then refined through Architectural Purity, which offers genuine spatial forms essential for maintaining cultural identity.

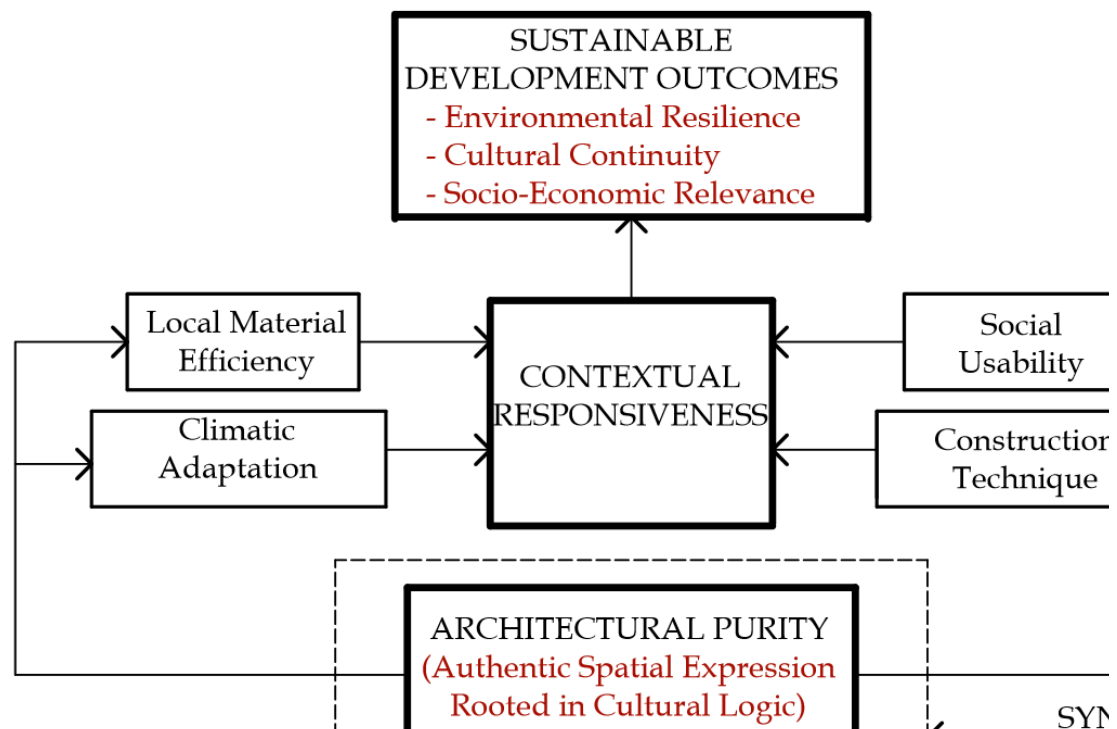


Figure 1: Illustration of culture as authentic base for spatial sustainable development.

The model asserts that purity facilitates sustainable development outcomes through contextual responsiveness, which is characterized by four operational catalysts: climatic adaptation, local material efficiency, social utility or usability, and construction technique. Integrating traditional principles with modernist ideals produces sustainability as a result of environmental resilience, cultural continuity, and socio-economic relevance, rather than as a superficial technical layer. The theoretical framework articulates the scholarly perspectives explaining why these inherent relationships exist within the model, while the conceptual framework elucidates how culture functions via architectural purity and contextual responsiveness to achieve sustainable developmental outcomes.

### 3.0 Methodology

This study employed a single-case qualitative method to explore the relationship between culture, architecture and sustainability through the lens of the Dominican Chapel. Grounded Theory Methodology (GTM), Content Analysis and Phenomenology were adopted to evaluate observers' experiences. The study was targeted at establishing how cultural synthesis harmonizes spatial conceptions to affect sustainability in works of architecture. To accomplish this objective, qualitative data - comprising interviews, site documentation, archival records, and other secondary sources - were collected. The data were then subjected to thematic analysis with NVivo word cloud to ground the study findings.

This research employed data from personal interviews with selected individuals - including architect Demas Nwoko (the project architect), 2 architectural scholars, 4 Dominican Priests, 32 worshippers, and 8 community representatives - and participant observation to gain qualitative insight into how different observers perceived the spatial character of the Chapel. Audio-recorded interviews were transcribed using electronic devices to ensure the accuracy of the data collected. Photographs of the study sites and other elements relevant to the research were also taken with electronic cameras and analyzed.

### 3.1 Case Study Selection and Justification

Located in the Dominican Institute in Samonda, the Dominican Chapel is part of the Catholic Archdiocese of Ibadan, Oyo State, Nigeria. Purposefully designed, the Chapel blends Catholic traditions, Dominican heritage, and Nigerian cultural elements. It sits atop a hill with lush lawns and features a prominent tower visible from Oyo Road, making it a landmark. Plate 1 shows an aerial view of the Chapel. Influenced by Yoruba culture, the Chapel includes totemic pillars reflecting cosmology, social structure, and ancestral

reverence. Other notable features are its tower, unique roof, arranged nave, selected materials, and ample natural light.

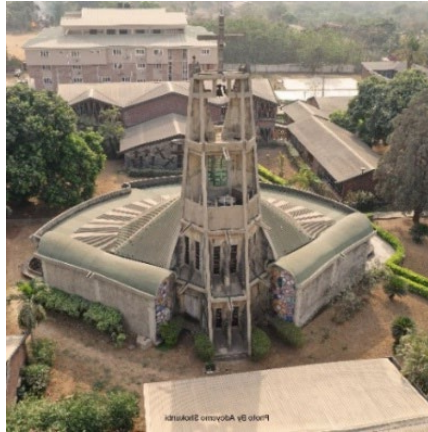


Plate 1: Area image of the site taken with a drone

In this study, cultural forms and spatial configurations in the Dominican Chapel were examined from the perspectives of sensory perceptions and functional resilience to interrogate its sustainability. Therefore, the choice of qualitative approach was considered suitable (Creswell & Creswell, 2023). According to Creswell and Creswell (2023), this approach enables an understanding of the functional and emotional characteristics that play significant roles in sensory and functional judgement in conjunction with the subjective experiences of stakeholders (observers) as they engage with the spatial character of the Chapel.

Creswell and Creswell (2023) noted that this method is valuable for exploring respondents' perceptions in controlled settings, allowing researchers to understand their thoughts and experiences. Consequently, a qualitative approach was used to capture observers' individual perspectives on the phenomena studied.

### 3.2 Data Collection

Data for this study were collected from multiple sources.

1. **Fieldwork** involved two main methods: (a) reviewing visual and archival materials to study design and layout; (b) gathering site data through visits, measurements, and assessments of space, materials, user activity, and lighting in the chapel.
2. **Historical information** was gathered from published works and archival records provided by the project architect and established scholars.
3. **Interviews** were conducted with key participants chosen for their expertise: (a) project architect Demas Nwoko, (b) four Dominican Order members, (c) two professional architects, and (d) eight church officials - including leaders from CMO, CWO, CYON, Head of Choir, Catechist, Lectors' President, Board of Church Wardens' President, and Master of Students.
4. **A discussion-based technique** using semi-structured interviews and focus groups engaged various stakeholders. Four groups of eight participants each, representing different church roles and parishioners, took part in hour-long sessions to share their views. Group leaders helped select participants, and purposive sampling ensured leadership involvement and balanced group composition. Selection focused on those with substantial knowledge of church traditions and active involvement in the Chapel community.

Semi-structured interviews were adopted to capture a range of perspectives on the Chapel's cultural form and functional qualities. This method documented both individual views and shared interpretations, enabling analysis of how users relate to the Chapel's material, spatial, and symbolic aspects based on their experiences.

### 4.0 Data Presentation and Analysis

#### 4.1 Data Presentation

The design of the Chapel blends indigenous cultural elements in a seemingly pure state of a traditional or vernacular architecture with sustainable principles, making it both eco-friendly and culturally meaningful. Architect Demas Nwoko created the Dominican Chapel in response to the client's fascination for Nok sculpture which they desired to be placed on their altar after a Nok culture conference conducted by the architect in 1969. The Dominican Priests were impressed by the expositions on the African traditional culture and were inspired to incorporate an African traditional symbol on their altar and did request the architect to craft a Nok sculpture for placement on their altar (Arigbabu, 2025).

Rather than construct a Nok plaque as requested by the monks, the architect crafted a sculptural edifice (the Chapel) with the notion to synthesize indigenous cultural features with modernist principles not only to align it with inherent responsiveness to the traditional environment but did render it to be functionally and aesthetically efficient while satisfying the needs of a modern church (Nwoko, 2022). According to Nwoko, the Chapel represents an effort to address loss of cultural identity while fulfilling the practical and environmental needs of the present.

Content analysis showed that the sweeping reforms after the second (2<sup>nd</sup>) Vatican Council (Vatican II – 1962 to 1965) paved the way for the experimentation of the cultural synthesis evident in the Dominican Chapel. The reform according to Deamer (2024) saw major changes in liturgical practices and church architecture particularly on how sacred spaces were to be designed to promote greater active participation of the faithful in the Catholic church. Rather than respond as requested to create a Nok sculpture, the architect conceptualized the Dominican Chapel with a figurative attempt to comprehensively denominate the African culture into a single artifact (the Chapel) as a sculptural piece. Figure 2 as illustrated by Cartwright (2019) shows the region in Nigeria where the Nok culture is domiciled while Figure 3, representatively detailed by Dunne, et al. (2021) illustrates the samples of sculptural elements typical of the Nok culture.

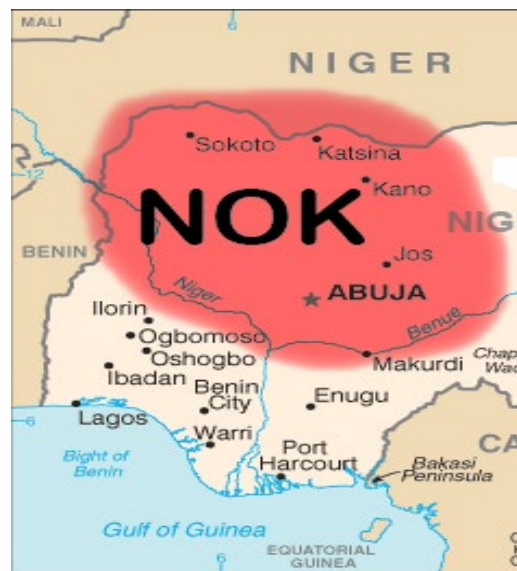


Figure 2: Map showing the region covered by the Nok culture  
Source: Reprinted from World History Encyclopedia (Cartwright, 2019)



Figure 3: Images of Nok cultural elements  
Source: Reprinted from Nature Communications (Dunne, et al., 2021)

The interview with the architect, Nwoko, revealed that the primary objective of the project was to create a systematic architectural solution that is responsive to the demand of the Dominican priests in conjunction with the drive to foster a cultural piece that is embedded in the culture of the people. To achieve this notion as inspired by the resolutions from the second Vatican Council in 1965, the architect revealed to have researched into all existing orthodox Cathedrals at the time to reconcile their spatial requirements with the traditional concepts of forms and spirituality. This initiative, eventually graduated into the conception of the existing sculptural form of the Dominican Chapel as show in Plate 2, which denotes a firm case of cultural synthesis resident in architectural purity from indigenous spatial designs.



Plate 2: An angular view of the Chapel showing the tower, roof (with incorporated barrel vault) and one of the side entrances.

It is evident from the historical records that the orthodox Catholic church floor plans before the second Vatican Council were typically rigid rectangular forms with the alters secured away from the worshippers in acknowledgement of God's holiness and the sinfulness of man (Andrews, 2024; Deamer, 2024). The sanctuary was located away from the congregation in identification with the altar as inhabiting the presence of God and for the sinful man to be distanced away from the holy altar. This was further demonstrated before Vatican II, when priests celebrated Mass facing the altar, "ad orientem", away from the congregation but the Vatican II encouraged "versus populum" with the priest facing the congregation and emphasizing the communal aspect of the Eucharistic celebration. This orientation aligned with the ordinance of the Dominican Order that advocates for close connection between the clergy and the laity during mass (Deamer, 2024).

In contrast with the pre-reform's ideals, the architect revealed that he had to conceptualize a circular floor plan, as shown in Figure 4, duly examined by Godwin and Hopwood (2007), in contrast with the traditional rectangular plan of the modernist principle, to reconcile the liturgical function of the church with the traditional cultural tenets. The architect offered that the reason for the circular plan was predicated on the intention to draw from the principles of the African traditional setting where communal meetings are set on concentric settings around elders. He clearly demonstrated a conscious effort to draw the cultural attributes of the people in reconciliation with the ecological challenges of the environment towards forming an architectural solution that is not only functionally relevant but responsive to the sustainability indices of the project's existence. He endeavored to ensure that the climatic conditions of the interior space of the church were outstandingly maintained by ensuring that the nave of the Chapel receives maximum ventilation across the vertical and horizontal sections of the church. To achieve this, he ensured that the sides of the Chapel are open with minimal partition for perfect ventilation.

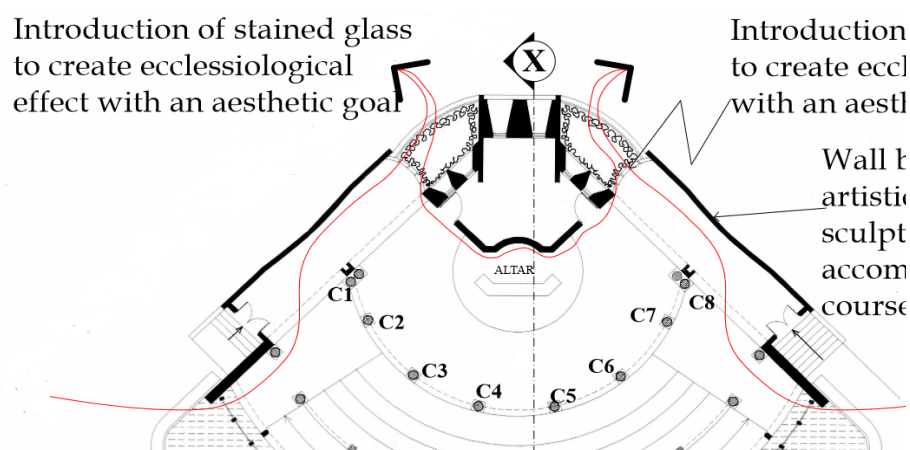


Figure 4: Map showing the region covered by the Nok culture

Source: (Adapted from Godwin and Hopwood, 2007, p52.)

The architect further observed that the different levels and varying slopes of the ceiling as shown in Figure 5, elaborated by Godwin and Hopwood (2007), was intended to create symbolic feelings that are tied to spiritual and emotional sustainability. The ceiling slopes gradually from the outermost section and progressively into a steeper sloped section flowing into the tower and suggesting a gradual guide of attention towards the tower which is designed with openings that bring in light and encourage vertical cross ventilation. The bright illumination from the sun pours from the tower and engages every worshiper's attention with a signification of spirituality in the course of liturgical service. The flow of the light through the tower into the altar is as shown in Plate 3

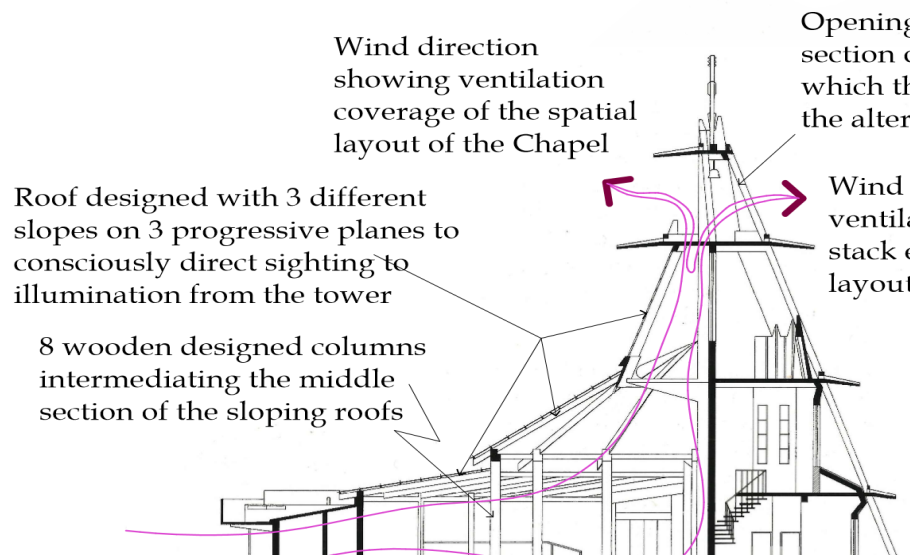


Figure 5: Map showing the region covered by the Nok culture  
Source: (Adapted from Godwin and Hopwood, 2007, p52.)

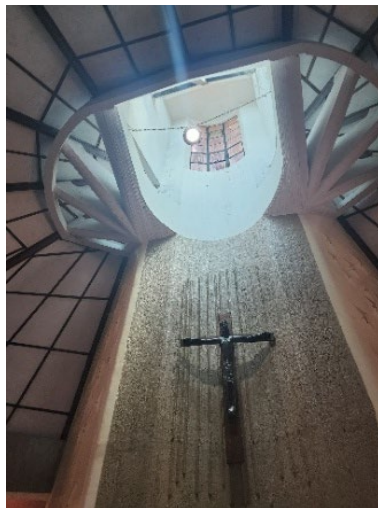


Plate3: The Tower with skylight pouring on the altar while illuminating the Crucifix.

One of the interviewed architects stressed that functional and sustainable aesthetics in architecture depend on design, materials, and cultural context. He noted that artistic quality is rooted in pure architecture and qualifies it in alignment with cultural heritage as it relates to material and spatial choices towards ensuring user's comfort and functional sustainability. (Orji, personal communication, November 20, 2025). These ideas suggest why the Dominican Chapel, denotes functional and aesthetic authenticity in identification with its integration of traditional African styles and cultural symbolisms (Nwoko, 2022)

In favor of regional cultural influences, a Dominican Priest noted that the Chapel's repeated use of circles extensively in the forms of the columns, Chapel floor plan, etc. denotes unity, eternity, and the continuation

of spiritual life, based on semiotic and symbolic interpretations. Sourced data revealed that the Chapel's architectural forms and configurations induce feelings of spiritual elevation during liturgical services. Respondents' phenomenological experiences align with the architect's aim to elevate worshippers' focus with the gradual sloping of the ceiling and accounts for both functional and spiritual sustainability of the church design.

Most respondents aligned with the view that the spatial progression from the entrances to the altar embodies the carriage of a ritual inclusiveness characterized by spatial continuity and openness with the imputation of cultural relevance. The architect maximized the incorporation of local materials in the design and construction of the Chapel to highlight the tactile qualities of the natural stone, laterite, and clay bricks commonly used in vernacular buildings – towards driving cultural authenticity and sustainability in Nigerian architecture (Pallasmaa, 2005).

Sourced data also revealed established desire by most respondents to attend religious services regularly in the Chapel, suggesting that culturally resonant architecture strengthens emotional attachment to sacred spaces as indicated in their responses. Conversely, several participants expressed concern regarding contemporary architectural practices that prioritize Western stylistic models over indigenous traditions. One of the interviewed architects emphasized that attempts to replicate foreign cultural expressions often result in diminished authenticity. According to this perspective, genuine creativity emerges from the reinterpretation of one's own cultural heritage within contemporary design practices. This philosophy stretches the canvass for creativity beyond limits and more significantly open chances of reconciling creative works to align with the cultural memories of the people for ease of aesthetic judgement from both functional and sustainable conclusions.

#### 4.2 Data Analysis

NVivo analysis adopted for the sourced data revealed that the Chapel's unique cultural identity arises from several cultural signatures or cultural elements, spatial arrangements, symbolic roof and spire, and traditional motifs. The traditional materials and integrated totems enhance the spatial aesthetic and traditional cultural cues the Chapel propels. Deducing from the thematized data it showed that the observers reacted significantly to the traditional features of the Chapel, noting the roof's resemblance to traditional Nigerian conical and pyramidal thatched structures, and recognizing the use of locally sourced materials such as laterite and clay blocks for their cultural and aesthetic significance. These elements create necessary resilience in the memories of the respondents with assured capacity for sustainable fancy and use.

The architect's response to Vatican II Reform was very significant in inspiring the integration of worshippers and liturgical officiants which deeply encouraged the typical African traditional village setting where authority and influence are often directed to a center which interactively gather the community around the elders. He applied this notion in the Church plan with the circular form, setting the altar at the center and the congregational seat tiers elevated above the altar in an amphitheater orientation to suggest an anti-thesis to the subjugation of man before the presence of God. He did this deliberately to elevate "man's sonship" and yet maintain reverence of His Almightyness. He further, took the slope of the ceiling gradually from the first inclination through a gradual slope to a steeply angle which glides into the spire at the center to orchestrate a gradual ascension of the worshippers' aspirations to God's divine presence. He tried to simulate the African traditional interpretation of space into the modernist principles of Gothic volumes by creating an aesthetical and functional relatable work of architecture. This feat created a signification of cultural cues in the memories of the worshippers and other users which connotes cultural wisdom and accounts for traditionally inclined senses of pure architectural forms and spatial articulations.

In exploring the synthesis of the Nigerian culture in the Chapel the architect dialectically advanced the Nigerian art, spirituality and local craftsmanship into a dialogical engagement with the orthodox modernist cathedrals which prided elevated Gothic arches, extensive stained-glass windows and intricate sculptural murals associated with medieval visions of transcendent order. The Chapel, however, reinterprets the role of light, space and ornamentation through a remarkable African lens as demonstrated on plate 3 showing the admittance of light through the spire onto the crucifix and the gradual sloping of the ceiling. While fulfilling the liturgical functions like the western orthodox Cathedrals, the Chapel's configuration exemplifies African motifs as shown on the wooden totemic pillars in Plate 4 illustrating extensive figurative carvings on the wooden columns. These aspirations also ground cultural memories which lead to aesthetic judgement and resilient cultural accommodation with sustainability cues.



**Plate 4:** Picture showing the interior of the Chapel with the totemic columns, inspiring cultural meanings

Besides, the Chapel was embellished with locally sourced materials extensively in the natural finish of stone stucco walls and fair-finished concrete which grounded the building in Nigerian cultural identity as shown in Plate 5. Most significantly, the architect incorporated sustainable design features such as wide-ranging natural ventilation in conjunction with comprehensive use of local materials and energy-efficient system which make it a requisite case study at the confluence of sustainability and culture.



**Plate 5:** The Side Entrance Foyer indicating extensive openness to maximum ventilation

The architect, in his persuasion not to encourage expansion of the Chapel when the congregation grows, offered to adopt measures that would forestall such future initiatives. He was convinced by the certainty of the Chapel to attract larger congregation of worshippers due to its phenomenal attributes. In the bid to forestall this initiative, he created moats (see Plate 6) on the two sides of the Chapel to negate such expansion and argued that when the situation arises, which he asserted to be inevitable, the Priests should consider multiplying the Chapel with the same concept and notion to make it a tool for meeting developmental goals of evangelism for church growth.



Plate 6: Picture showing the installed moat on one side of the Chapel

From the analysis of the sourced data, it was obvious that the Monks were severally tempted to seek the expansion of the Chapel by the swelling population of congregants but were ever restrained by the provision of the moats. Instructively they have been given to opening parishes within the vicinity to solve the problem of congregational growth. Though not with the replication of the Chapel as advised by the architect. However, the creation of the new parishes takes care of outpouring new congregational members and some of those whose residences to the new parishes offer to go there due to convenience, some resilient parishioners would still visit the Chapel due to extra phenomenological attachment.

## 5.0 Discussion

The findings reveal that the Dominican Chapel, Ibadan, is not a mere composition of postcolonial modernism but a profound demonstration of **Architectural Purity** achieved through the resolution of dialectic tensions and purposively driven with principles towards the manifestation of sustainable developmental outcomes. This, of course, accounts for several layers of interpretations of the various forms and elements of the Chapel by the respondents due to several interactions between modernism and traditional principles in the Chapel.

### 5.1 Synthesis as a Generative Base for Architectural Purity.

The study observed a distinctive sequence of articulation for both contemporary and traditional elements within the Chapel, indicating that **Cultural Synthesis** serves as a cognitive framework for genuine spatial expression founded upon **Architectural Purity**. By incorporating traditional logic – such as adapting a circular nave from customary courtyard systems into the liturgical program and integrating totemic columns – the findings demonstrate the architect's intent to address the dialectical challenge between ancestral values and modern ecclesiastical demands. This approach aims to establish a sustainable architecture that supports both social and cultural continuity. It is particularly significant for fostering originality and ensuring a design composition that fulfils the essential requirements of modern principles, while simultaneously reinforcing the core values of traditional concepts to enhance the authenticity and "Purity" of the composite design.

The study clearly shows that the Chapel blends both traditional and modernist architectural features, creating a distinctive look that invites various interpretations. Its circular nave, inspired by Nigerian communal gatherings, helps foster inclusion and encourages congregants to participate around the altar. This contrasts with the linear design of Western Basilicas, where the altar is separated from the congregation. As a result, many congregants feel a strong sense of cultural belonging and "home" at the Chapel, making it their preferred place of worship – even if it requires traveling long distances.

The architect's faith in the Chapel's ability to attract a sizable congregation seems to be validated by this discovery, given its notable design. Motivated by this, he envisioned the Chapel as a tool for church outreach, anticipating the cultural fusion would evoke strong emotional and spiritual responses among viewers. To achieve this vision, he limited the Chapel's size with surrounding moats, encouraging the development of additional chapels across the city as attendance grows.

### 5.2 Material Honesty Through Climatological Indices

The Chapel's use of traditional raw materials and unpainted masonry reflects Kahn's principle of **Material Honesty** and demonstrates a strong dedication to **Environmental Resilience**. By choosing not to

apply imported finishes like paint, the building avoids frequent maintenance commonly needed in tropical climates. This approach highlights the “Pure” quality of each material, allowing it to express its natural finish and aligning with Kahn’s (2003) view of a building’s “inherent nature”. In this context, Material Honesty in the Chapel supports sustainability by placing greater value on the durability and performance of local materials rather than on fleeting aesthetic appeal.

By incorporating the architect's perspective on material honesty and traditional cultural values, it is evident that the chapel’s design strongly influences how visitors perceive its aesthetics and function. Respondents’ experiences relate to the importance of materials’ structural qualities, as well as elements such as light, sound, rhythm, and liturgical adaptations, all of which shape their sensory and emotional reactions. Materials and phenomena - including laterite bricks, stone with warm colors, and natural light filtered onto the altar and Crucifix - evoke profound feelings of emotion and spirituality.

### 5.3 Contextual Responsiveness as Catalyst for “Pure” Sustainability.

The study shows that the Chapel relies fully on deep natural ventilation and does not plan to use artificial or mechanical methods. Analyzing its ventilation reveals that the design responds well to its surroundings, reinforcing its architectural integrity. The ceiling slopes inward toward the central spire, featuring openings at the top that enhance air movement, even allowing stacked ventilation. This combination of a spacious core and multiple vertical and horizontal openings increases cooling effectiveness and aligns with Kahn’s principle of functional honesty. Overall, the Chapel achieves sustainable development suitable for tropical climates by maintaining a purely natural indoor environment without any mechanical intervention.

### 5.4 The Emergence of Spatial Developmental Sustainability.

The Chapel exemplifies architectural design deeply rooted in indigenous cultural knowledge, cosmology, social values, and material traditions, all directed towards spatial developmental sustainability. This approach confers socio-ecological and economic relevance, extending the Chapel's longevity and aligning it with the concept of "Pure Architecture"—a practical model for achieving spatially sustainable outcomes suitable for its environment. The enduring nature of the Chapel is attributed to its contextual suitability, as opposed to the decline often observed in generic, non-contextual modern designs; this is evident from its continued significance since its commissioning in the mid-1970s. Thus, in the context of the Chapel, "Pure Architecture" signifies a form of sustainability grounded in a strong sense of place and community relevance, effectively resisting obsolescence.

The study clearly demonstrates that culture plays a foundational role in shaping architectural practice in Nigeria and should be central to discussions on sustainable architectural development. Recognizing the instructional capacity of culture to reinforce communal values will undoubtedly strengthen efforts toward achieving "Architectural Purity" through the integration of socio-cultural principles.

## 6.0. Conclusion

The study concludes that architectural works transcend basic functional and technical requirements by integrating culturally significant systems of aesthetics and sustainability indices, established through enduring techniques and environmental resilience. It posits that the Chapel’s sustainable architectural development in a postcolonial context represents an advanced concept of **Cultural Synthesis**, rather than a simple technical adaptation. This approach illustrates how “Pure Architecture” acts as a crucial bridge connecting ancestral heritage with contemporary functionalism.

Cultural capital—which includes indigenous knowledge, cosmology, and social values—serves as a fundamental basis authenticating spatial sustainability when blended with modernist ideas, as found in the study. The Dominican Chapel demonstrates this dialectical synthesis by harmonizing Nigerian traditional spatial logic with modern church requirements, resulting in a cohesive space. This process is interpreted through Kahn’s principle of Material Honesty, manifesting as the Chapel’s “Purity,” where the use of raw materials leads to fewer maintenance needs and greater environmental resilience.

This study points to a significant change for modern African architects, encouraging them to go beyond surface-level decorations and instead weave cultural patterns into the fundamental structure and function of their buildings. It also emphasizes that local building practices - like passive cooling and material choices - should take precedence in **Contextual Responsiveness**, rather than relying on imported, energy-demanding mechanical systems, to ensure sustainability in tropical regions.

Although this research is a qualitative case study centered on one religious landmark, its findings highlight the unique craftsmanship of Demas Nwoko and may not be readily applicable to other commercial or residential building types without further modifications. Consequently, future investigations could benefit from incorporating quantitative data, such as energy-efficiency ratings or long-term thermal performance assessments, to add empirical support to these observations.

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